Chapter 1

General introduction
The challenge of dementia

The worldwide prevalence of dementia is predicted to nearly double in the next 20 years, from around 36 million in 2010 to 66 million in 2030. This is due to ageing of the world population; a trend barely influenced by the recently reported decline in age-specific dementia incidence. The burden on health care systems in terms of costs and workforce (formal care) will increase proportionally. In parallel, the demand for care provided by close others (informal care) will grow. In health care systems with a gatekeeper like in the Netherlands, general practitioners (GPs) play a central role in the diagnosis and management of dementia. However, the results of several studies indicate that primary care for persons with dementia lacks structure and coherence.

The overarching aim of this thesis is to improve our understanding of the important field of GP care for persons with cognitive decline or dementia and their relatives, by exploring current practice and experimenting with new strategies. Main questions are:

- What is the current diagnostic accuracy of GPs to diagnose dementia, at different stages of dementia?
- What are preferences of persons with, and of persons without cognitive impairment, regarding disclosure of a diagnosis of dementia?
- What is Dutch GPs’ level of awareness of cognitive impairment among older persons without an established diagnosis of dementia?
- What is the effect of training GPs to diagnose mild cognitive impairment (MCI) and dementia and having them collaborate with a practice nurse in case finding of, and care for persons with MCI and dementia?

Dementia and mild cognitive impairment

Dementia; definition, clinical presentation and course

Dementia is an umbrella term describing a variety of neurological illnesses with common symptoms. In 2013, the American Psychiatric Association (APA) revised the criteria for the diagnosis of dementia, mainly in order to improve the recognition of dementia subtypes not debuting with amnesia. However, studies in this thesis used the criteria of the previous (fourth) version of the Diagnostic and Statistical Manual (DSM) of the APA. These criteria are:
• the presence of memory impairment and one or more of the following cognitive
disturbances: aphasia; apraxia; agnosia or a disturbance in executive functioning.
• the cognitive deficits cause significant impairment in social or occupational functioning
and represent a significant decline from a previous level of functioning\textsuperscript{12}.

The presentation and course of dementia vary. Presenting symptoms may comprise
of memory deficits, personality changes, easy confusion, apathy or other symptoms\textsuperscript{15}.
While some dementia subtypes may progress fast, the most common subtypes generally
progress over several years\textsuperscript{16–17}. Ultimately, people become completely dependent on
others for all basic activities of daily living. In most cases, the need for care at some point
exceeds the capacity of the informal caregiver. Consequently dementia often requires
institutionalization\textsuperscript{18}. At advanced stages, persons with dementia may display behavioural
disturbances, loss of control over bodily functions and psychiatric symptoms, like delusions,
hallucinations, emotional instability or anxiety.

**Mild cognitive impairment (MCI); definition and course**
MCI is defined as objective cognitive impairment beyond that expected for age and education
level, but not severe enough to require help with usual activities of daily living or to cause
significant impairment in social or occupational functioning\textsuperscript{19,20}.

Persons with MCI are at increased risk of dementia, but conversion rates depend on the
criteria used\textsuperscript{21}. In population samples, one year conversion rates ranged from 3% to over
20%, but three year conversion was less than 50\%\textsuperscript{22,23}. Prediction of conversion in the
individual patient remains difficult\textsuperscript{24,25}.

In our study we focus on both MCI and dementia because the demarcation between
the two may be difficult to discern for GPs. Moreover, both MCI and dementia may have
consequences for the subjective wellbeing of persons with MCI and their relatives (see
below).

**Experiences of persons with dementia and their relatives**
Despite the major impact of the loss of cognitive functions and the negative feelings
often evoked by the diagnosis, persons with dementia do not necessarily go through
intense suffering and show varying degrees of awareness of their cognitive and functional
limitations\textsuperscript{26–28}. However, depending on their level of awareness of cognitive decline, their deficits may cause frustration and uncertainty about their identity, value and relationships. People with early stages of dementia may apply a variety of emotion-oriented coping strategies like denial, avoidance, minimization, normalization or acceptance and problem-oriented strategies like compensating or lowering their aspiration level\textsuperscript{26,29,30}.

As mentioned, relatives like spouses and children play an important role in the initial care for community-dwelling dementia patients. In the Netherlands, about 65% of care for persons with dementia is provided by relatives\textsuperscript{31}. While this care task can be rewarding and fulfilling, it is also recognized as a major stressor\textsuperscript{32,33}. Informal caregivers are at increased risk of experiencing anxiety symptoms and depression compared with non-caregivers\textsuperscript{33–35}. The strongest predictors of such symptoms are the nature and intensity of care, and perceived positive aspects of providing care\textsuperscript{36,37}.

**Experiences of persons with MCI and their relatives**

Persons with MCI report that the loss of cognitive functions may induce stress and negative emotions\textsuperscript{38–40}. The aetiology and meaning of MCI are often unclear to people, and they may interpret their symptoms as age related\textsuperscript{41}. Reactions to the diagnosis range from fear of advancement to dementia to relief because dementia is not present\textsuperscript{38}. Relatives of persons with MCI may experience a burden and are at higher risk of depressive symptoms. Roles may change and the relation with the patient may worsen. Relatives report a need for information about medical aspects of MCI and an increased need for support and services\textsuperscript{42}.

**Treatment of dementia**

There is no cure for dementia. Meta-analysis of 127 studies reporting on a variety of endpoints (one to 42 studies per endpoint) demonstrated that non-pharmacological interventions reduce psychological and behavioural symptoms of the person with dementia, decrease caregiver burden and depression and improve subjective wellbeing and knowledge of the caregiver\textsuperscript{36}. For example, psychoeducation with active participation of the caregiver showed beneficial effects on all these endpoints. Other non-pharmacological interventions, like cognitive behavioural therapy have more specific effects (e.g. respite care reduced caregiver burden and depressive symptoms). Another meta-analysis of 23 studies showed that such interventions may reduce dysfunctional reactions of caregivers to behavioural and psychological symptoms of dementia\textsuperscript{43}. Effect sizes were small to moderate in both meta-
analyses. Moreover, multi-component psychosocial interventions were shown to delay admission to a long term care facility. Case management may reduce admissions to care homes and costs.

Pharmacological treatment with acetylcholinesterase inhibitors can temporarily alleviate symptoms, or delay progression of cognitive decline in a minority of persons with mild to moderate Alzheimer’s disease (AD). It can also have a small positive effect on functioning in this group. However, the clinical relevance is unclear and in practice these medicines are often discontinued because of side effects. For most other dementia subtypes, pharmacological interventions have not shown beneficial effects. Pharmacological treatment of behavioural disturbances with antipsychotics may decrease caregiver burden.

However, overtreatment and side effects of these drugs are a concern.

**Treatment of MCI**

There are indications that psychotherapy may help persons with MCI to accept the diagnosis and that it increases acceptance, knowledge and skills in caregivers. There is modest evidence that aerobic exercise and mental activity have small but significant beneficial effects on, particularly executive, cognitive functioning of persons with MCI. Currently, no medications have proven to be effective for MCI.

**Primary care**

**Dementia diagnostics in primary care**

In countries with a gatekeeper health care system, the initial assessment of cognitive deficits is the responsibility of the GP. However, the diagnostic process in the primary care setting can be highly variable within and between practices and is often demand-led and rather unstructured.

Primary care dementia guidelines recommend straightforward diagnostic assessment when dementia is suspected. However, GPs indicate that this is often not accomplished and persons with dementia and relatives may experience the period between the first consultation and a firm diagnosis as overly long. The literature is inconsistent about the proportion of persons with dementia accurately diagnosed by GPs. To quantify the accuracy of GPs’ dementia diagnoses, at different stages of dementia, we performed a systematic review of the literature on this subject (chapter 2).
Barriers to diagnosis may occur at the level of the person with dementia, relatives and at the physician level\textsuperscript{64}. Persons with dementia and caregivers were shown to delay seeking professional help for months to years after becoming aware of symptoms of cognitive decline\textsuperscript{65,66}. Reasons at the patient level or caregiver level include fear of confrontation, fear of the diagnosis and lack of awareness or misinterpretation of symptoms\textsuperscript{64}. Barriers to diagnosis at the physician level are also manifold, including diagnostic uncertainty, embarrassment to confront someone with the possibility of dementia, not wanting to stigmatize, own avoidance issues or fear of the disease and (experiencing) lack of time to adhere to the complex guidelines for diagnosing dementia\textsuperscript{62,63,67–72}.

However, it is unclear to what extent GPs are at all aware of cognitive decline in their persons and how this affects underdiagnosis of dementia. Therefore we investigated Dutch GPs' awareness of cognitive impairment in older persons without a diagnosis of dementia (chapter 5). In addition, we designed and executed a cluster randomised controlled trial (RCT) to improve case finding and management of dementia in primary care (chapter 4 and 6).

**Recognition and diagnosis of MCI**
MCI is often not recognized in primary care and the diagnosis is rarely documented in the medical records\textsuperscript{10,73}. However, this may also be related to MCI being a relatively new construct.

**Disclosure of a diagnosis of dementia**
Best practice recommendations for disclosure describe a careful and stepwise process. Steps include: exploration of the patient’s ideas and expectations, exploration of preferences regarding disclosure, preparation for a possible diagnosis of dementia and disclosing the diagnosis\textsuperscript{74}. After disclosure GPs should provide tailored information, respond to emotions, and offer further support and guidance\textsuperscript{74}. Persons with dementia and caregivers do not always experience communication with professionals to meet these recommendations: sometimes there is not even a dialogue, or physicians make a dismissive impression\textsuperscript{60,75}. Among GPs, there is wide variation in attitudes regarding disclosure. Still, the majority does not fully disclose the diagnosis to the person with dementia\textsuperscript{61,62,76}. To quantify preferences regarding disclosure of a diagnosis of dementia among people with and without cognitive decline we reviewed and meta-analysed the literature on this subject (chapter 3). As part of this, we explored common reasons in favour of, as well as against disclosure.
Chapter 1

Management of dementia in primary care

In countries with a gatekeeper system, GPs are well situated to play a role in the provision of medical care after establishment of a dementia diagnosis. However, avoidance and lack of coordination may make such care more complex than necessary. Although most GPs see it as their task to provide care for people with dementia, they also experience it as challenging, and do not necessarily embrace recommended aspects of management like care coordination or treatment of behavioural symptoms.

GPs see it as their task to review medication, detect underlying psychiatric conditions and protect persons with dementia from dangerous situations. Despite recommendations in guidelines, GPs may not perform a needs assessment or make a long term plan. They may also not offer respite care or refer to a support group. The latter may be related to limited (knowledge of) available services. GPs do not necessarily see care management as their task and also the treatment of behavioural problems is experienced as difficult and unrewarding. Furthermore, they indicate a lack of reimbursement and time as important barriers to optimal dementia management. Resistance but also pressure from caregivers can make dementia management difficult and stressful. From their perspective, caregivers report that GPs do not recognise their needs.

Management of MCI

Primary care dementia guidelines from different countries provide contradictory recommendations on the management of MCI ranging from offering reassessment of cognitive functioning, to management of cardiovascular risk factors or referral to memory services. Most guidelines lack recommendations on psychoeducation and support for persons with MCI. To our knowledge, there is no evidence on what GPs tell to persons with MCI and whether they generally refer these people.

Evidence gaps and general outline of this thesis

There are several knowledge gaps around diagnosis, disclosure and treatment of persons with MCI and persons with dementia in primary care. Below we describe some of these gaps, describe the subsequent research questions and give a general outline of this thesis.
Chapter 2
Although it is known that underdiagnosing dementia is common in the primary care setting, studies on GPs’ diagnostic accuracy at the different stages of dementia are still scarce. In chapter 2 we present the results of a systematic review of studies that compared GPs’ diagnoses of dementia at different stages, to a firm reference standard diagnosis of dementia (i.e. a specialist diagnosis or a diagnosis based on an extensive standardised assessment (e.g. CAMDEX)).

Chapter 3
GPs’ routine in dementia disclosure may not meet patient preferences. However, a synthesis of the evidence on preferences regarding disclosure of a diagnosis of dementia of persons without and of persons with cognitive impairment is missing. In chapter 3 we present a systematic review and meta-analysis of studies reporting proportions of persons wanting and not wanting to be informed about a diagnosis of dementia. In addition, we provide an overview of the most frequently encountered arguments for the different preferences.

Chapter 4
Research on interventions aimed at improving the diagnostic process (e.g. physician education; collaboration with practice nurses) is heterogeneous and shows inconsistent results. There are indications that such interventions can increase the rate of dementia diagnoses and improve adherence to diagnostic recommendations of dementia guidelines. Studied populations vary from entire older primary care populations to older people meeting frailty criteria or patients in whom GPs wanted to ascertain a diagnosis of dementia. There are no studies on the yield of case finding of MCI and dementia among older persons in whom GPs considered cognitive impairment or dementia possibly present. Moreover, none of the previous studies assessed whether the diagnostic interventions had beneficial or detrimental effects on the mental health of patients and relatives. In chapter 4 we describe the design of a cluster RCT testing the effect of a training for GPs to diagnose MCI and dementia, combined with case finding and subsequent support and care by a practice nurse. The intervention targeted older persons in whom GPs considered cognitive impairment or dementia possibly present. Outcomes were: 1) the number of diagnoses of MCI and dementia after one year, and 2) the mental health of the older persons and their relatives.
Chapter 5

It is unclear to what extent different barriers contribute to delayed or missed dementia diagnoses. Previous qualitative studies identified patient-, caregiver-, physician-, and health care system related barriers. To our knowledge, there is no current data on the proportion of older persons in whom GPs are at all aware of the presence of cognitive decline. This level of awareness determines whether interventions aimed to promote earlier diagnosis of dementia should either: 1) improve the recognition of cognitive deficits, 2) help GPs to overcome barriers to initiate diagnostic evaluation when they have recognized such deficits, or 3) both. In chapter 5 we describe a study in which we assess Dutch GPs’ awareness of cognitive decline in their older patients by comparing their judgment on the presence or absence of cognitive deficits with a reference standard of cognitive functioning86.

Chapter 6

In chapter 6 we present the results of the cluster RCT described in chapter 4, including a discussion of the limitations and a comparison with previous diagnostic studies. In addition, we provide some recommendations for future studies into case finding of dementia.

Chapter 7

In chapter 7, the general discussion of this thesis, we present the main findings of our research in the context of the current literature, a discussion of the limitations and methodological issues, and what they mean for the interpretation of our findings, and finally of the implications of our findings for clinical practice and future research.
References


Chapter 1


Chapter 1


